

FIG. 1

1

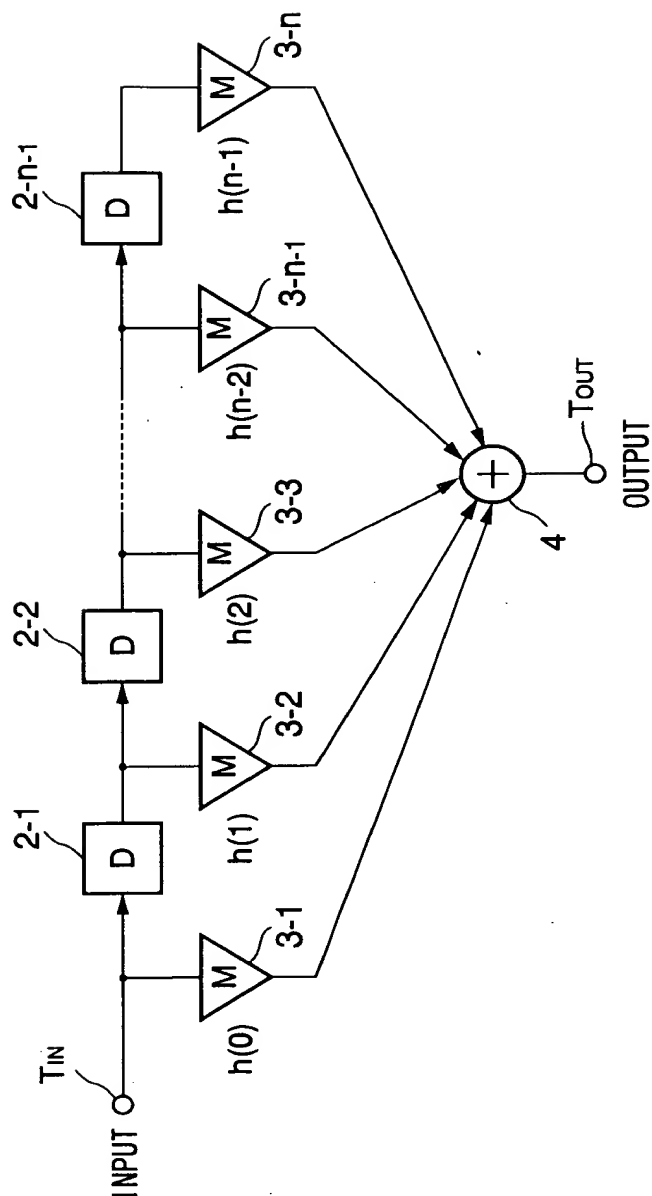


FIG. 2A

FIG.2A

$20\log|H(e^{j\omega})|[\text{dB}]$

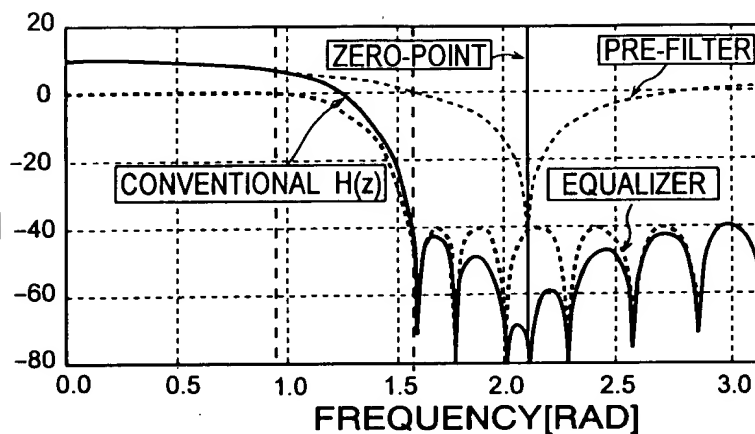


FIG.2B

$H(e^{j\omega})$

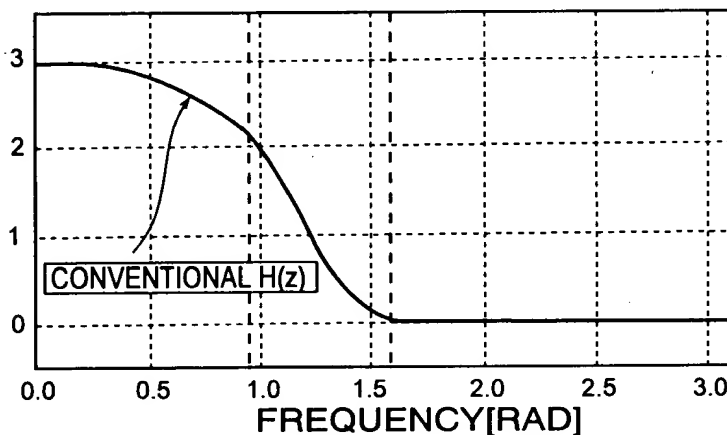


FIG.2C

$D(e^{j\omega})-H(e^{j\omega})$

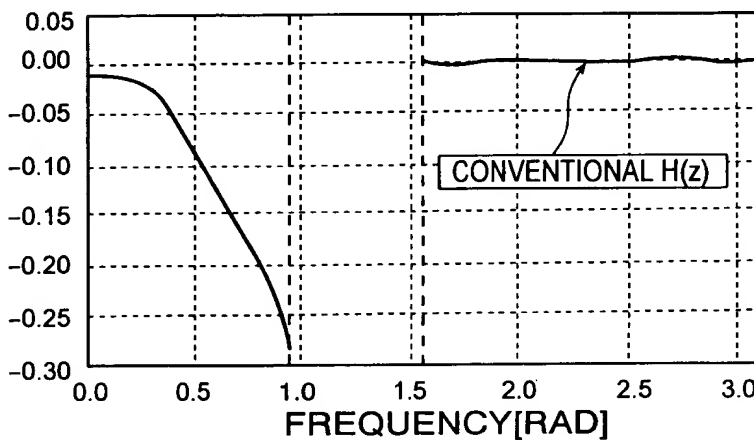
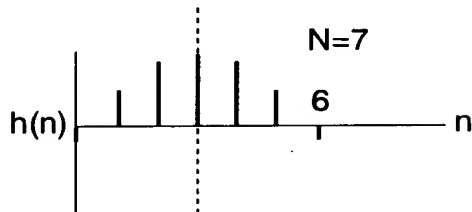


FIG.3A

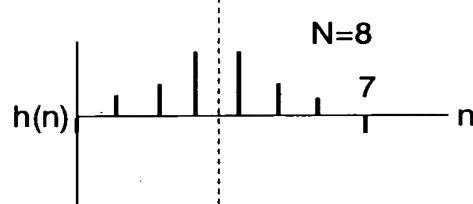
CENTER OF SYMMETRY



CASE 1: ODD NUMBER TAP,  
EVEN SYMMETRY

FIG.3B

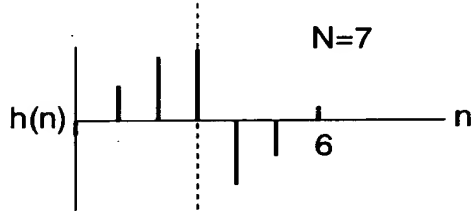
CENTER OF SYMMETRY



CASE 2: EVEN NUMBER TAP,  
EVEN SYMMETRY

FIG.3C

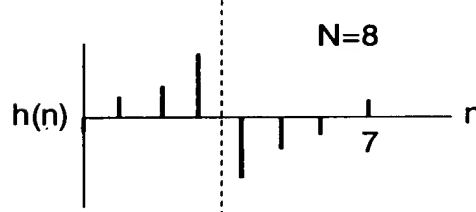
CENTER OF SYMMETRY



CASE 3: ODD NUMBER TAP,  
ODD SYMMETRY

FIG.3D

CENTER OF SYMMETRY

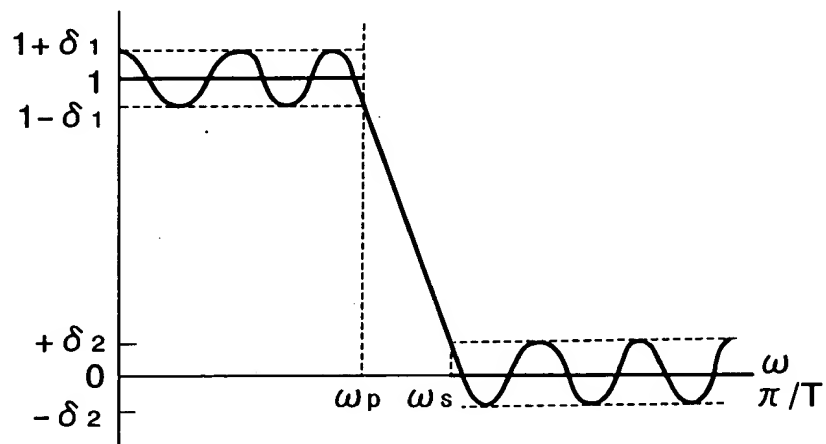


CASE 4: EVEN NUMBER TAP,  
ODD SYMMETRY

FIG.4

CASE	$Q(e^{j\omega})$	R
1	1	$(L-1)/2+1$
2	$\cos(\omega/2)$	$L/2-1+1$
3	$\sin(\omega)$	$(L-3)/2+1$
4	$\sin(\omega/2)$	$L/2-1+1$

FIG.5



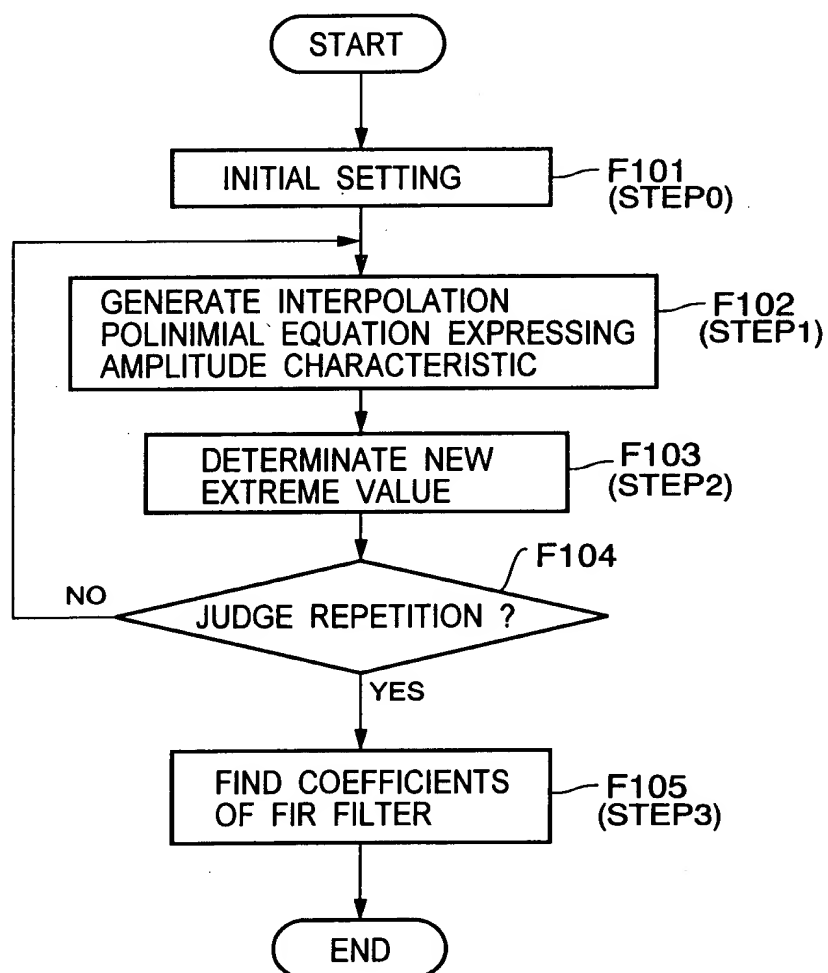
[illegible]

FIG.7A

FIG.7B

FIG.7C

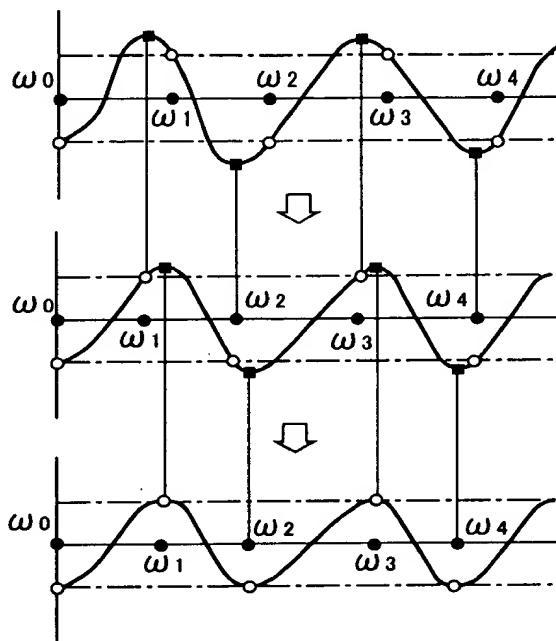


FIG.8

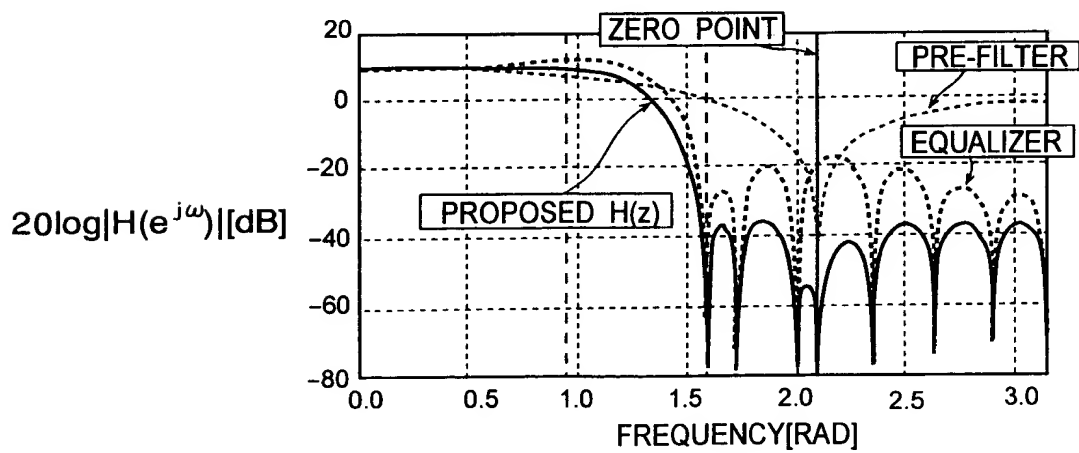


FIG. 9A

$20 \log |H(e^{j\omega})| [\text{dB}]$

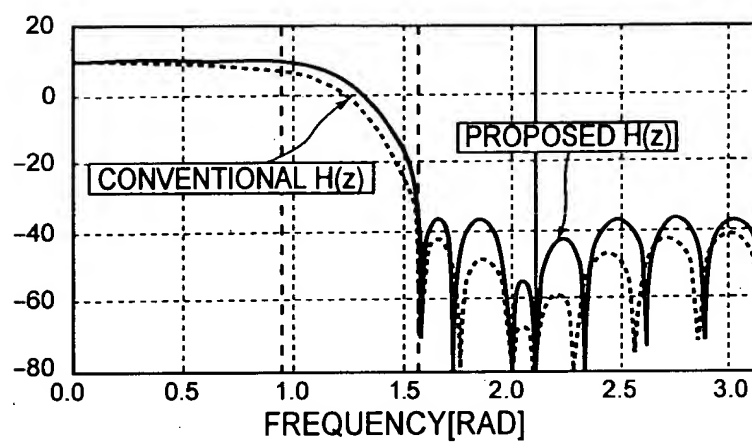
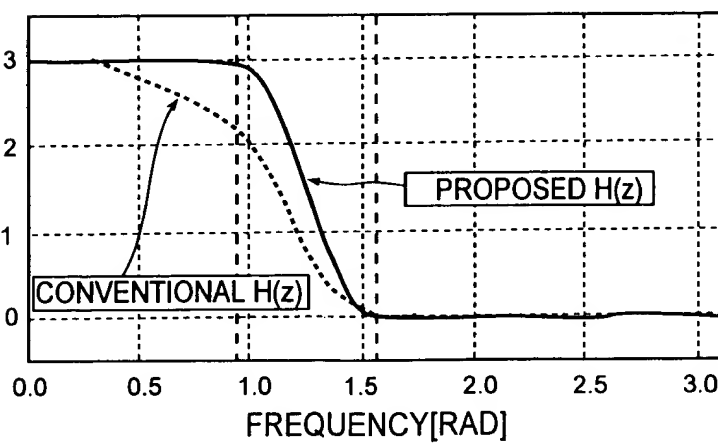


FIG. 9B

$H(e^{j\omega})$



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FIG.10

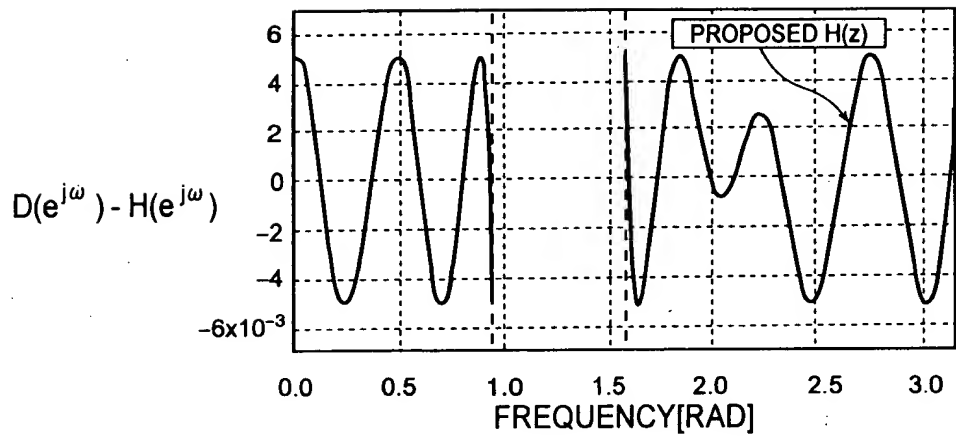




FIG.11

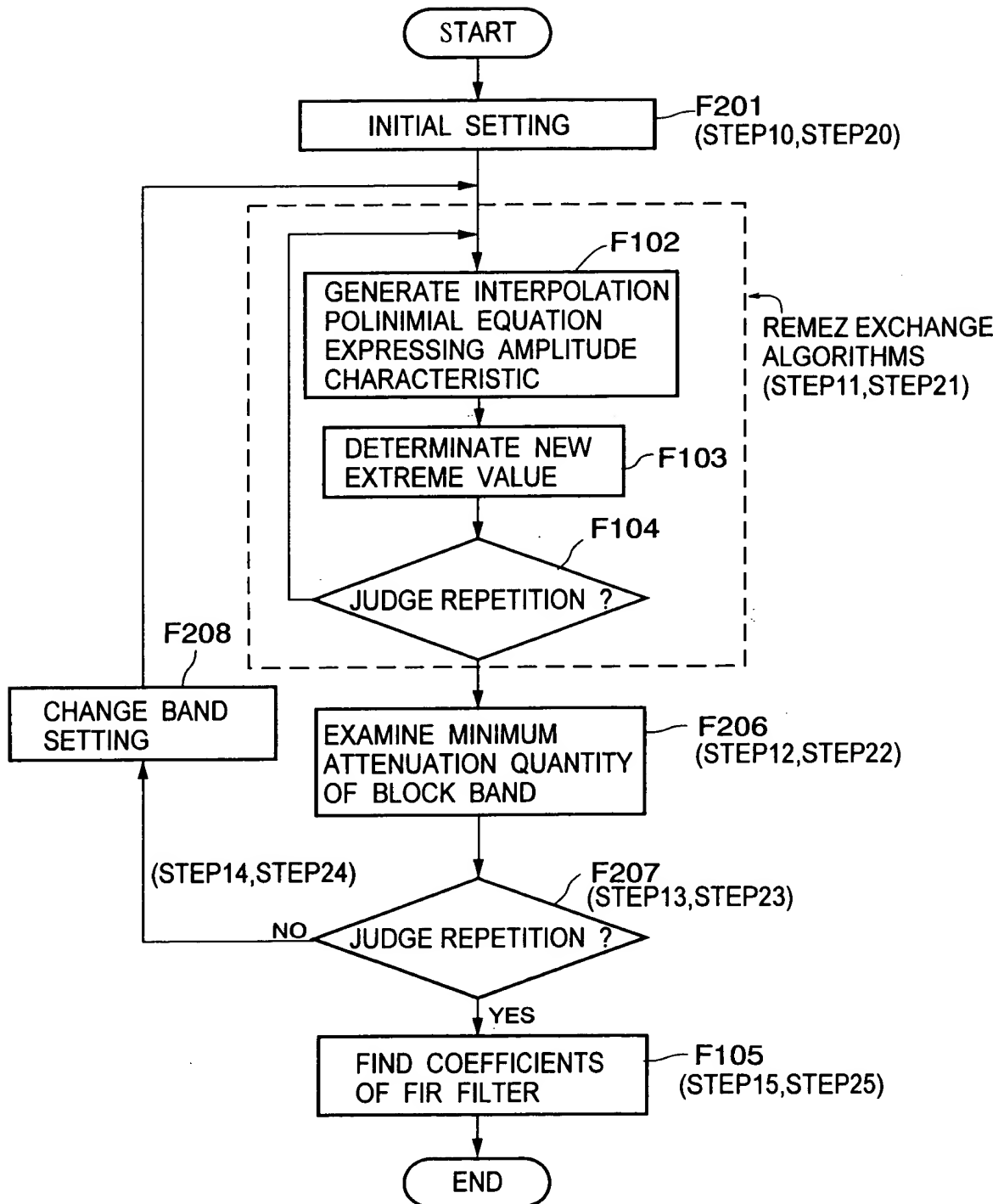


FIG.12

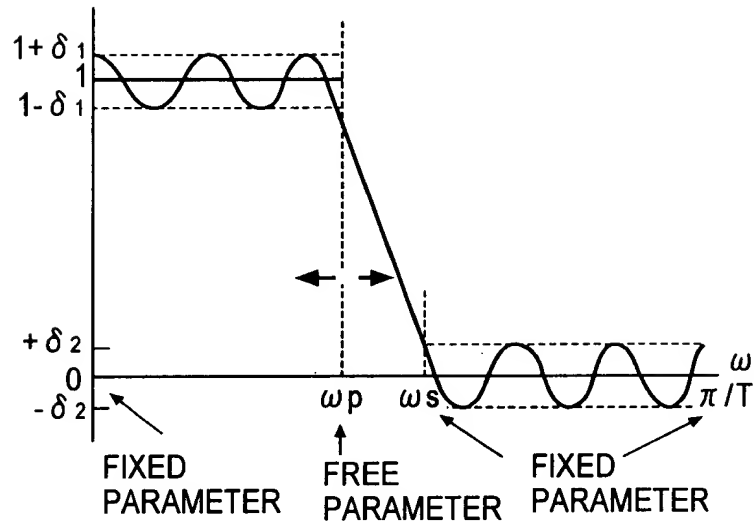
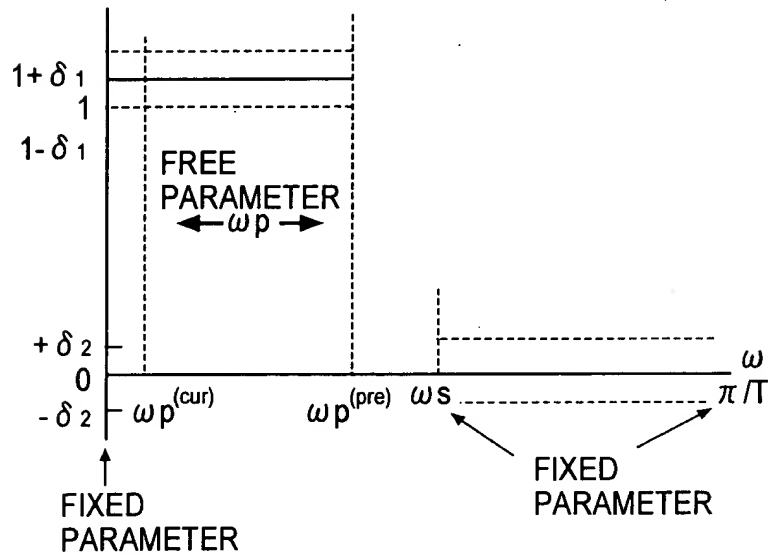
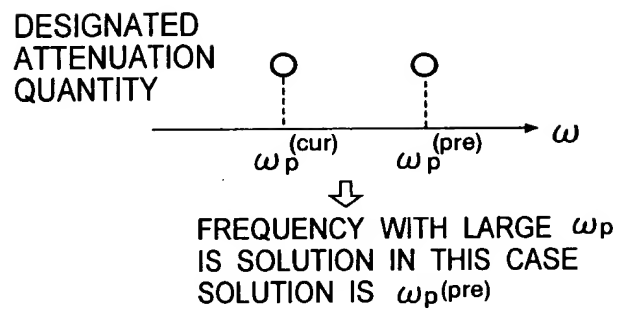


FIG.13



**FIG.14A**

BOTH SATISFY  
→END



**FIG. 14B**

BOTH DOES NOT SATISFY  
→NO SOLUTION→END

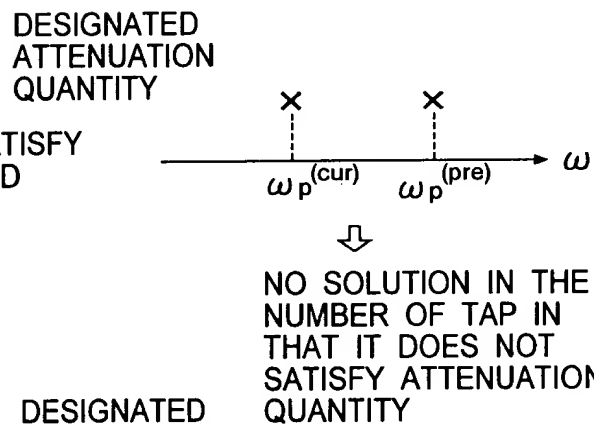
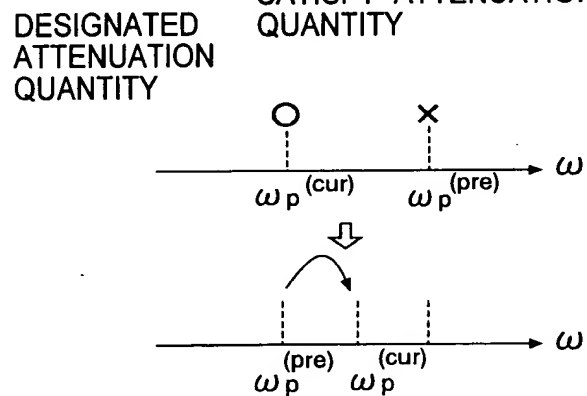


FIG. 14C

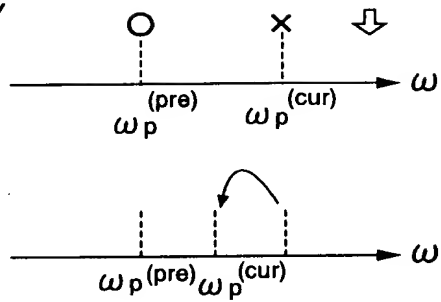
ONLY ONE SIDE  
SATISFIES  
→FOR NEXT STEP



# FIG.15A

ONLY ONE SIDE  
SATISFIES  
→FOR NEXT STEP

DESIGNATED  
ATTENUATION  
QUANTITY



# FIG.15B

BOTH SATISFY  
→FOR NEXT STEP

DESIGNATED  
ATTENUATION  
QUANTITY

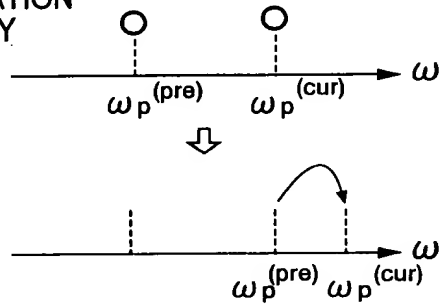


FIG.16

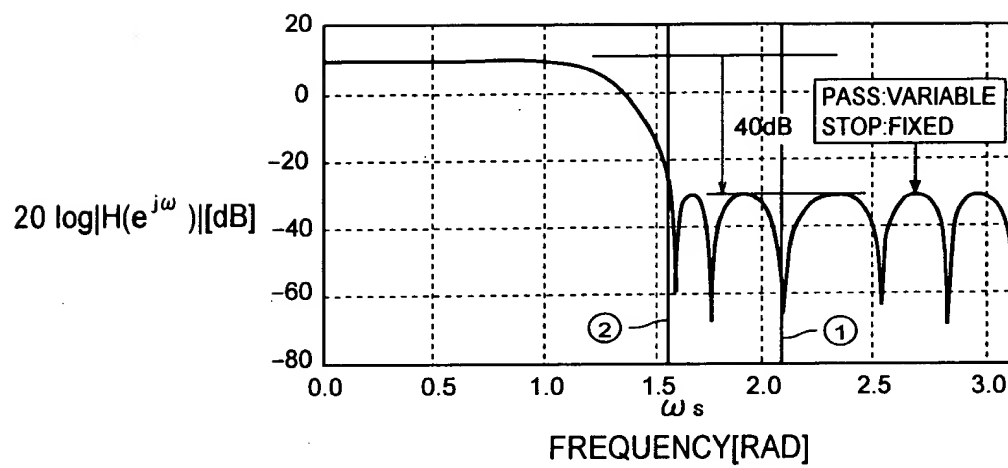


FIG.17

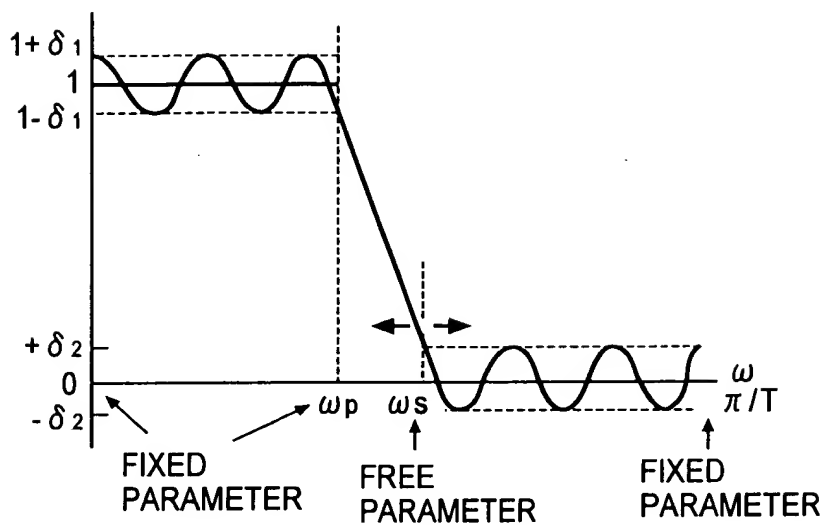


FIG.18

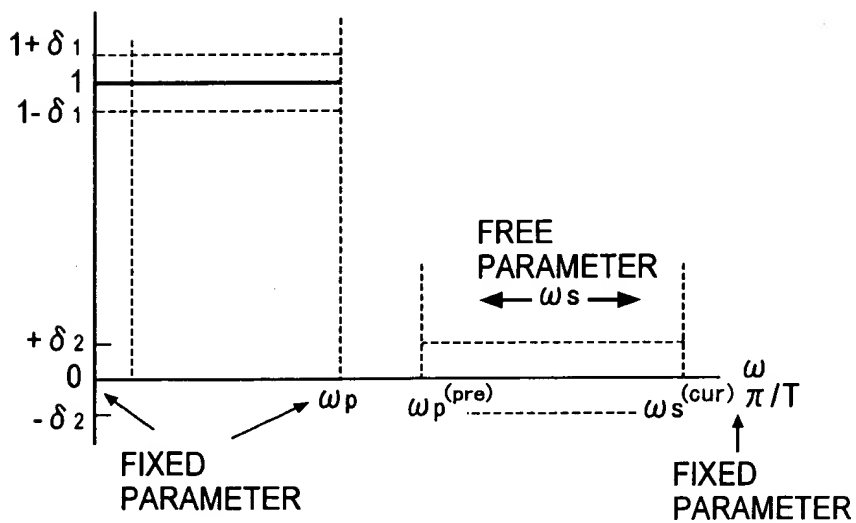
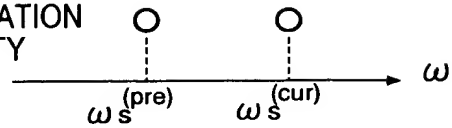


FIG.19A

BOTH SATISFY  
→END

DESIGNATED  
ATTENUATION  
QUANTITY

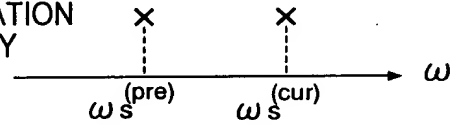


FREQUENCY WITH SMALL  $\omega_s$   
IS SOLUTION IN THIS CASE  
SOLUTION IS  $\omega_s^{(pre)}$

FIG.19B

BOTH DOES NOT SATISFY  
→NO SOLUTION→END

DESIGNATED  
ATTENUATION  
QUANTITY

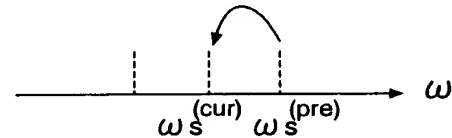
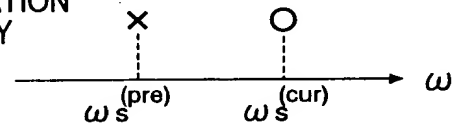


NO SOLUTION IN THE  
NUMBER OF TAP IN  
THAT IT DOES NOT  
SATISFY ATTENUATION  
QUANTITY

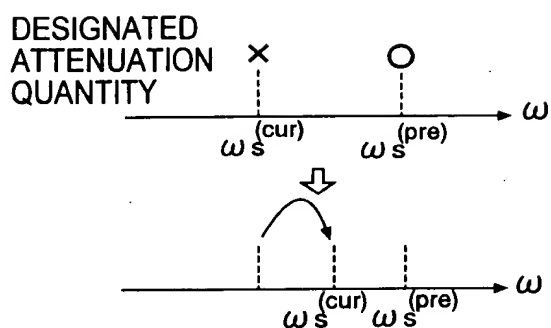
FIG.19C

ONLY ONE SIDE  
SATISFIES  
→FOR NEXT STEP

DESIGNATED  
ATTENUATION  
QUANTITY

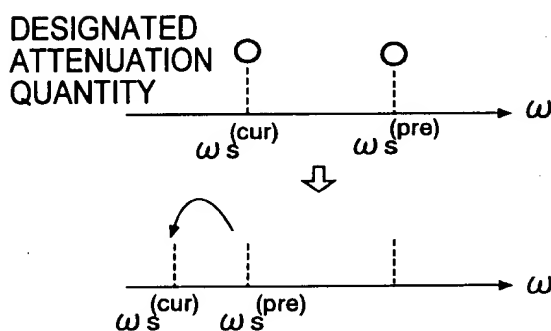


ONLY ONE SIDE  
SATISFIES  
→FOR NEXT STEP



**FIG. 20B**

BOTH SATISFY  
→FOR NEXT STEP





105030 19012800

FIG.21

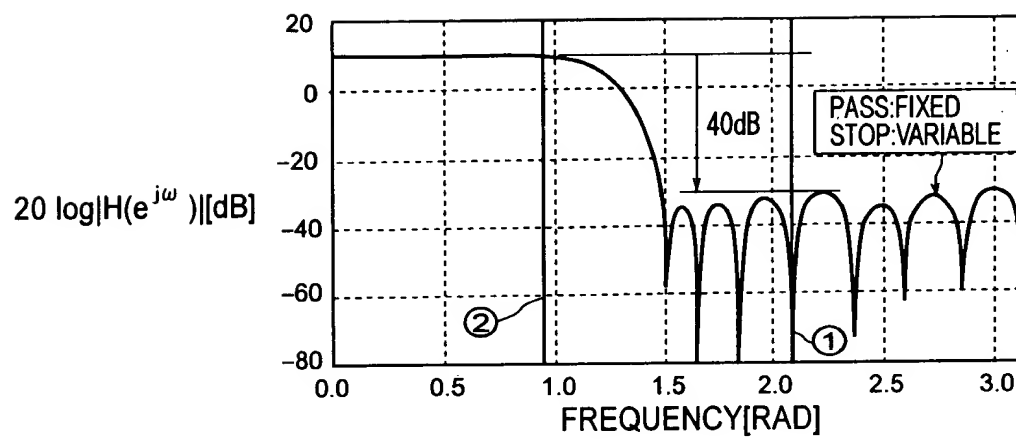


FIG.22

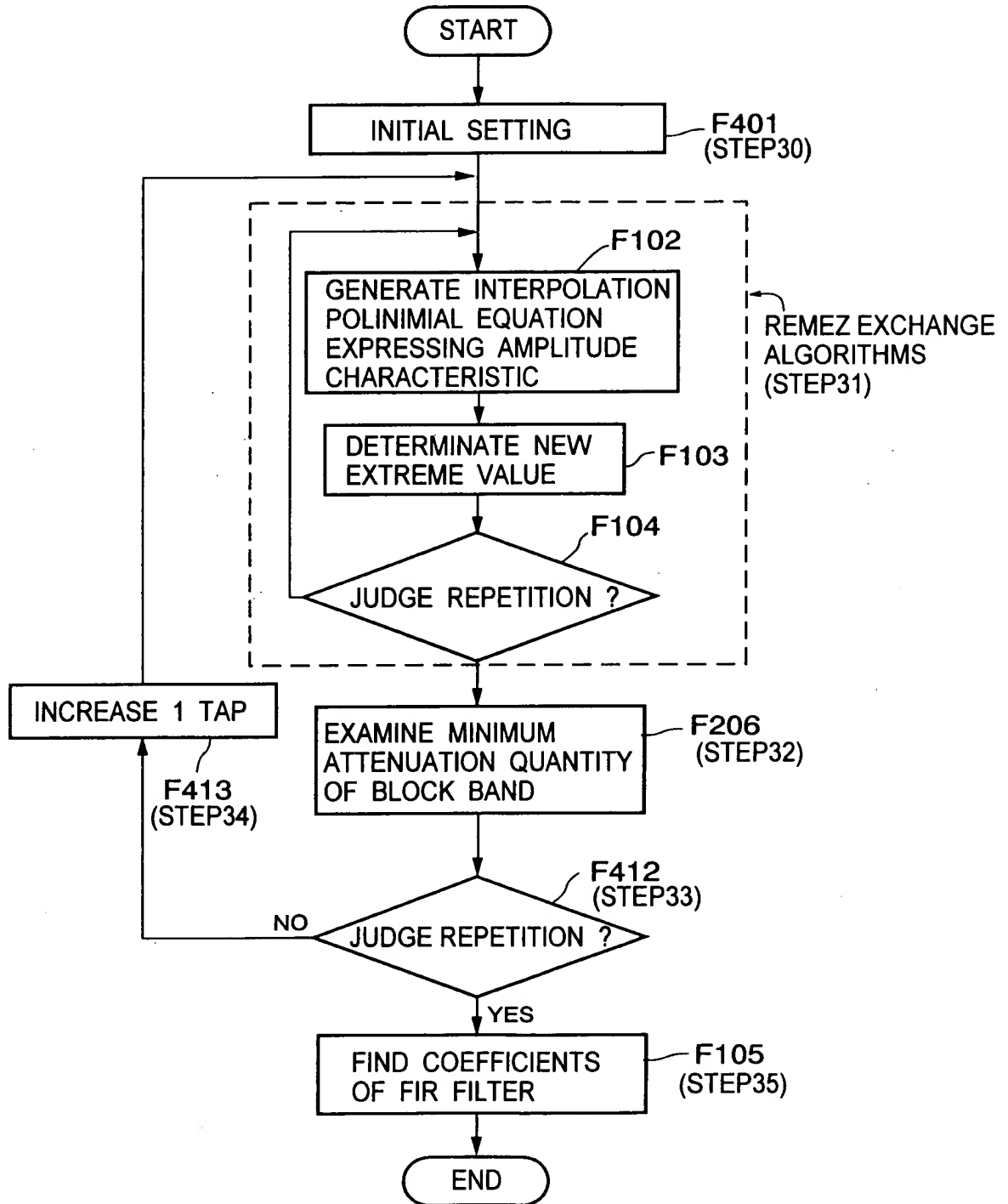
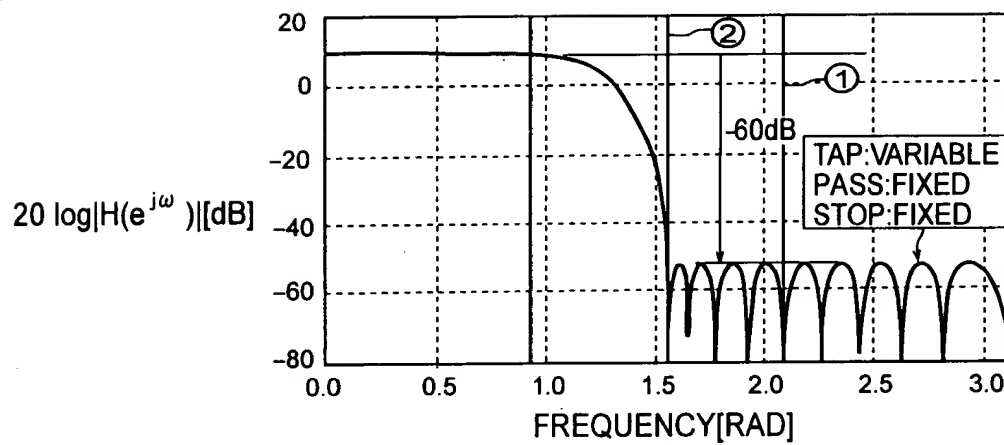


FIG. 23

FIG.23



# FIG.24

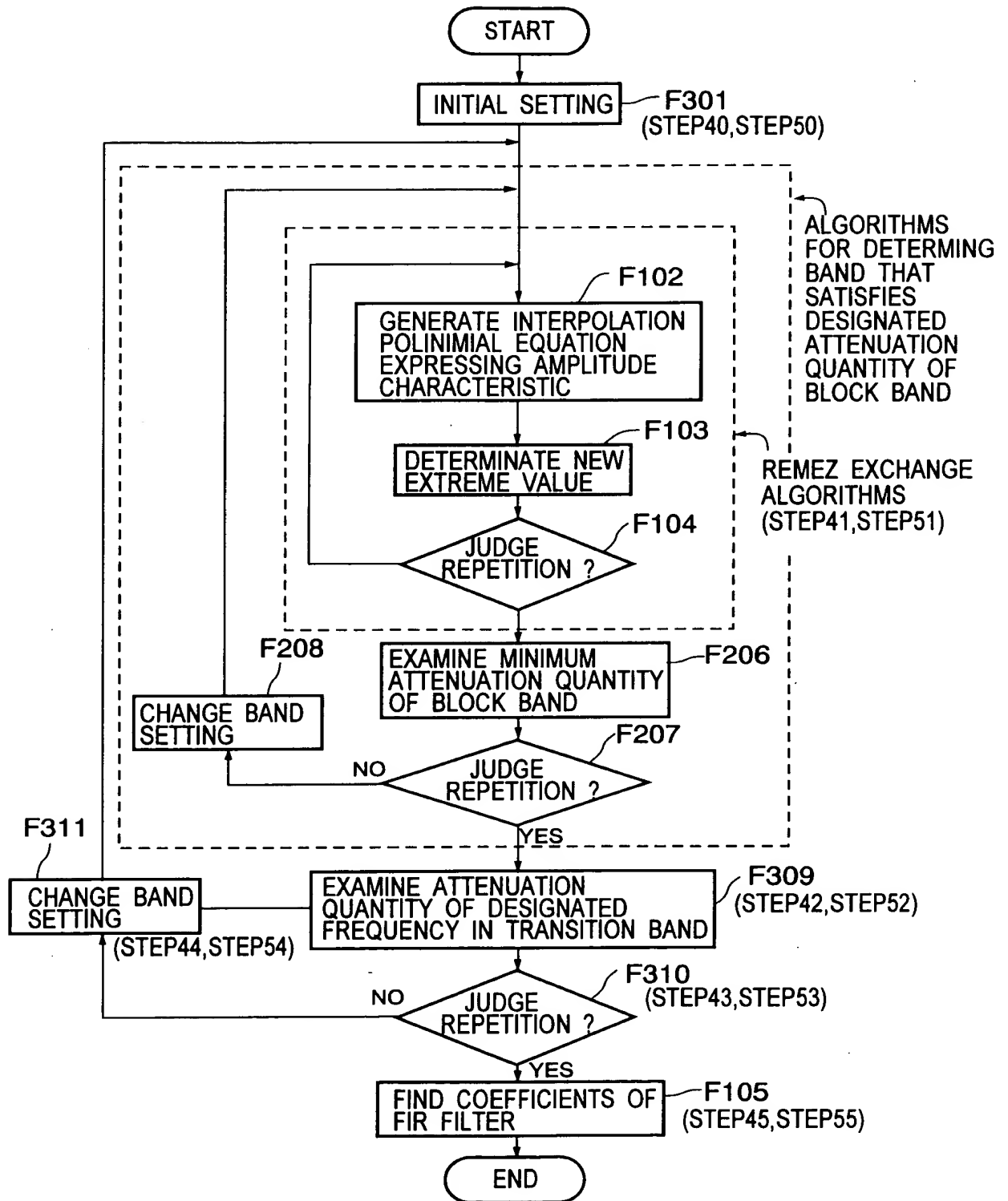


FIG.25

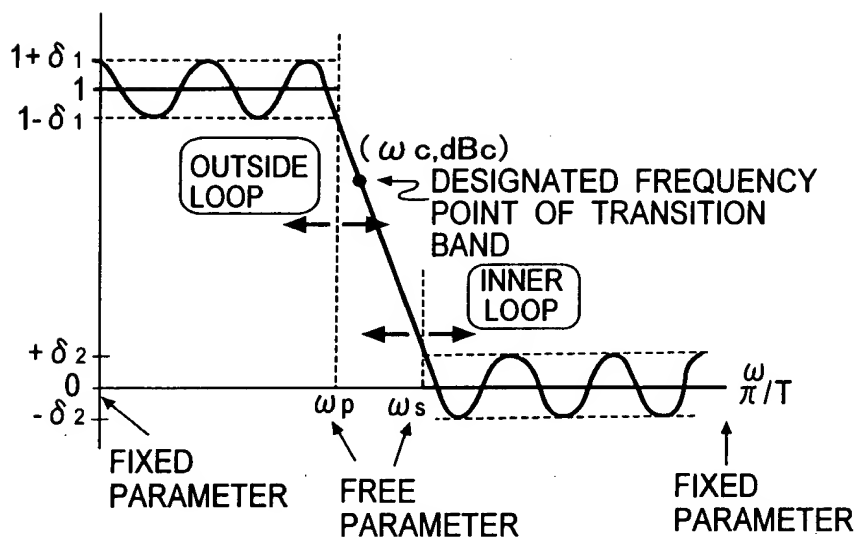
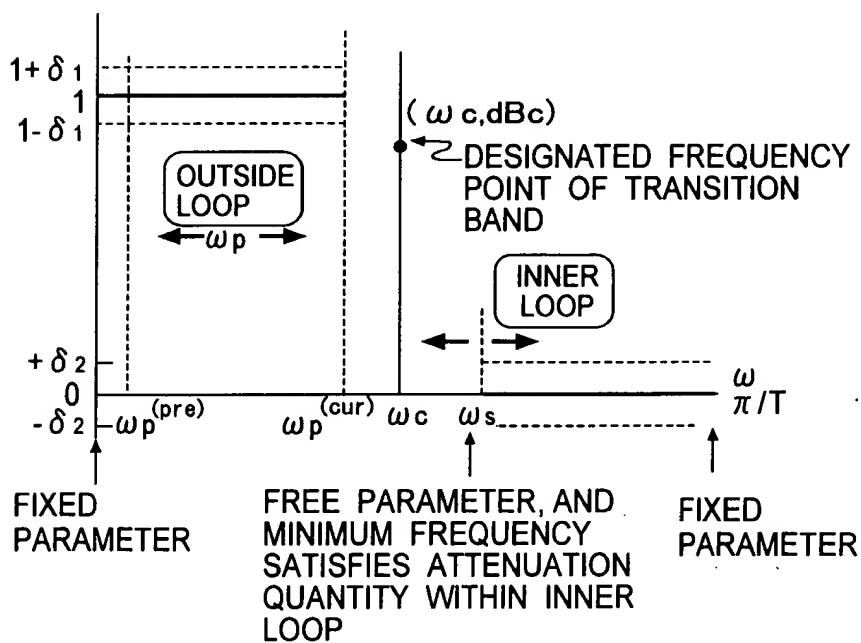
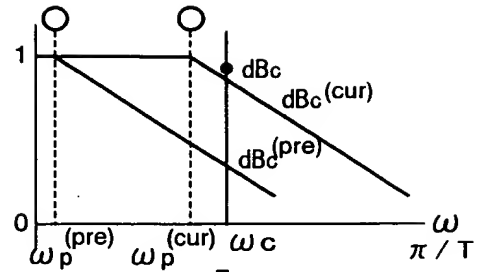


FIG.26



# FIG.27A

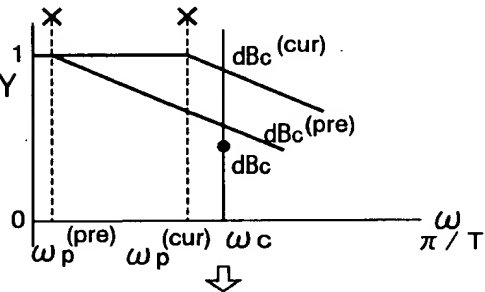
BOTH SATISFY  
→END



FREQUENCY WITH LARGE  $\omega_p$   
IS SOLUTION IN THIS CASE  
SOLUTION IS  $\omega_p^{(cur)}$

# FIG.27B

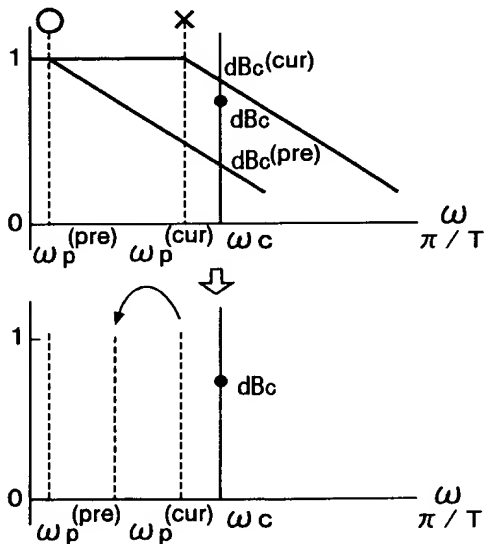
BOTH DOES NOT SATISFY  
→NO SOLUTION→END



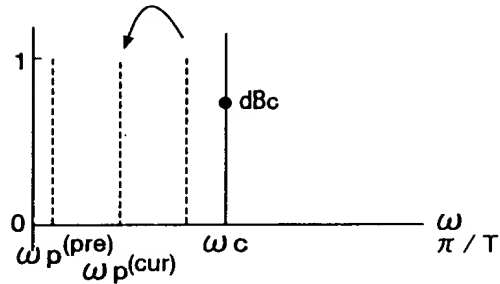
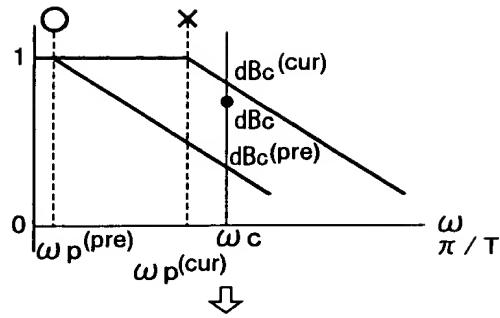
NO SOLUTION IN THE NUMBER OF TAP  
IN THAT IT IS NOT PASSED THROUGH  
POINT  $(\omega_c, dB_c)$   
OF TRANSITION BAND

# FIG.27C

ONLY ONE SIDE  
SATISFIES  
→FOR NEXT STEP



**FIG.28A**  
 ONLY ONE SIDE  
 SATISFIES  
 →FOR NEXT STEP



**FIG.28B**  
 BOTH SATISFY→FOR  
 NEXT STEP

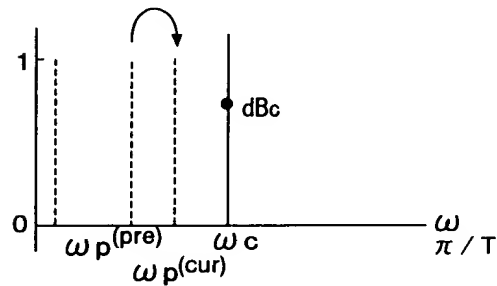
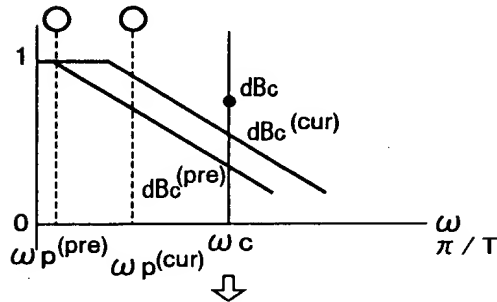


FIG.29

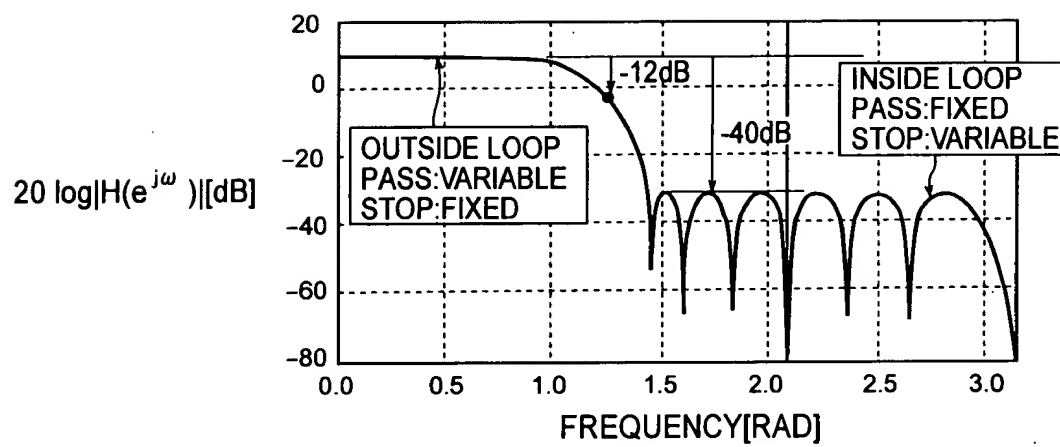




FIG.30

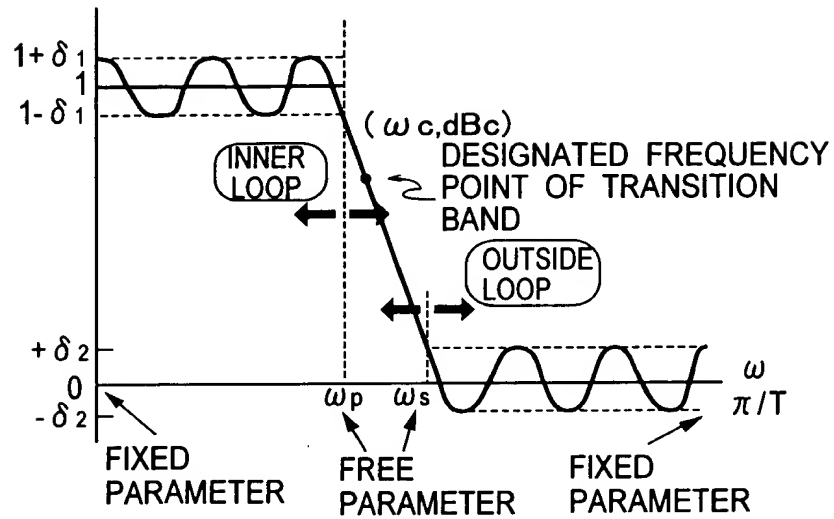
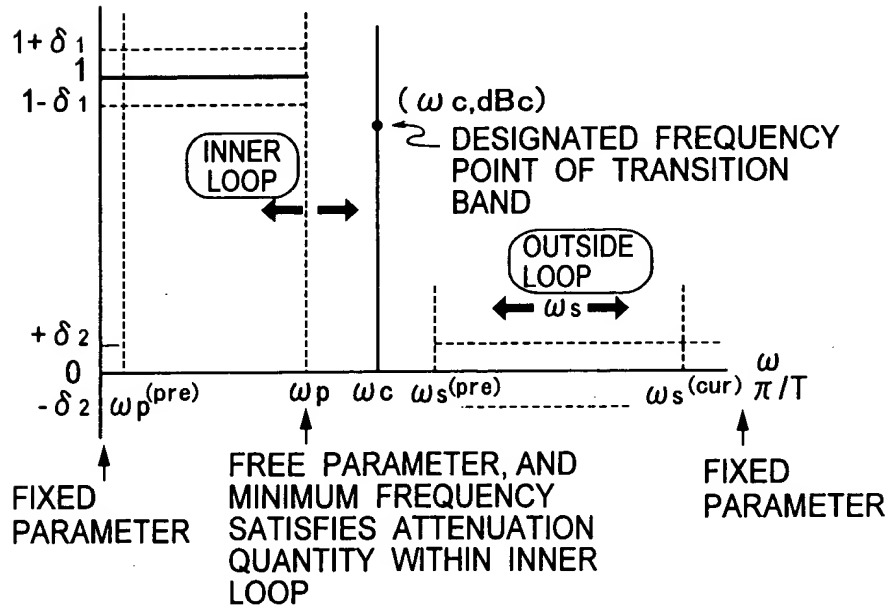
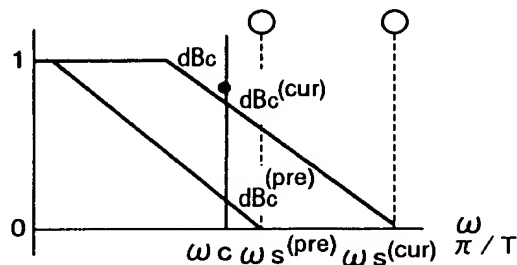


FIG.31



# FIG.32A

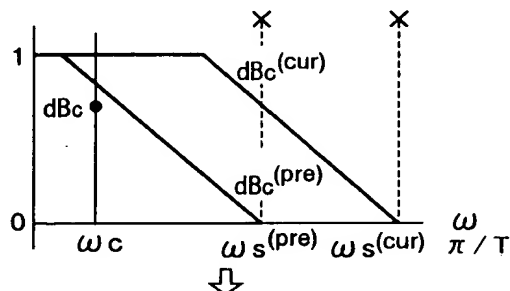
BOTH SATISFY  
→END



FREQUENCY WITH LARGE  $\omega_s$   
IS SOLUTION IN THIS CASE  
SOLUTION IS  $\omega_s(\text{cur})$

# FIG.32B

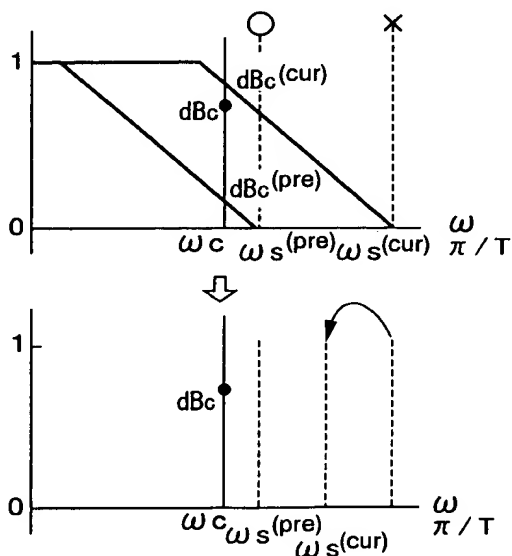
BOTH DOES NOT SATISFY  
→NO SOLUTION→END



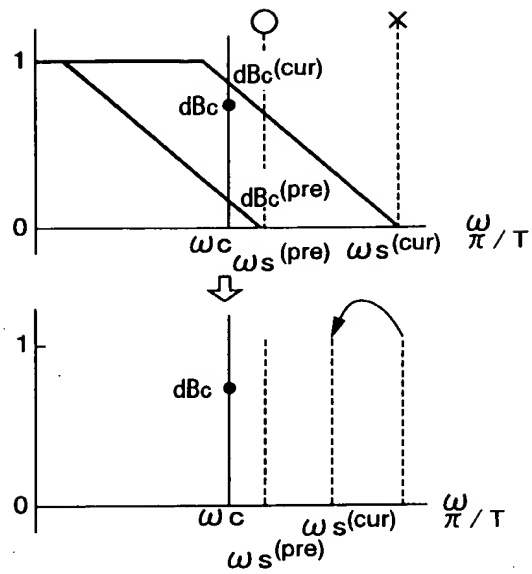
NO SOLUTION IN THE NUMBER  
OF TAP IN THAT IT IS NOT  
PASSED THROUGH FREQUENCY  
OF TRANSITION BAND

# FIG.32C

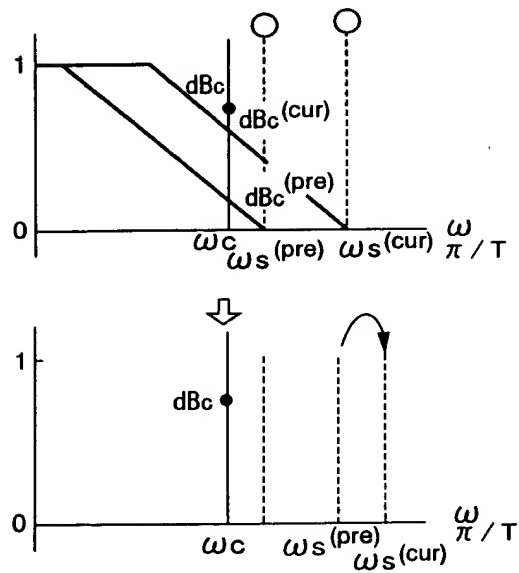
ONLY ONE SIDE  
SATISFIES  
→FOR NEXT STEP



**FIG.33A**  
 ONLY ONE SIDE  
 SATISFIES  
 →FOR NEXT STEP



**FIG.33B**  
 BOTH SATISFY  
 →FOR NEXT STEP



0034061 060604  
103030 15042800

FIG.34

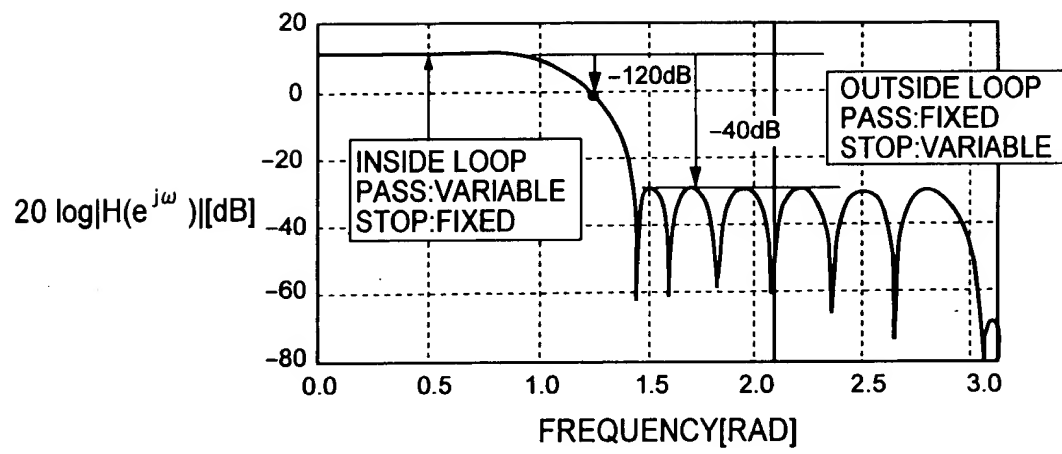
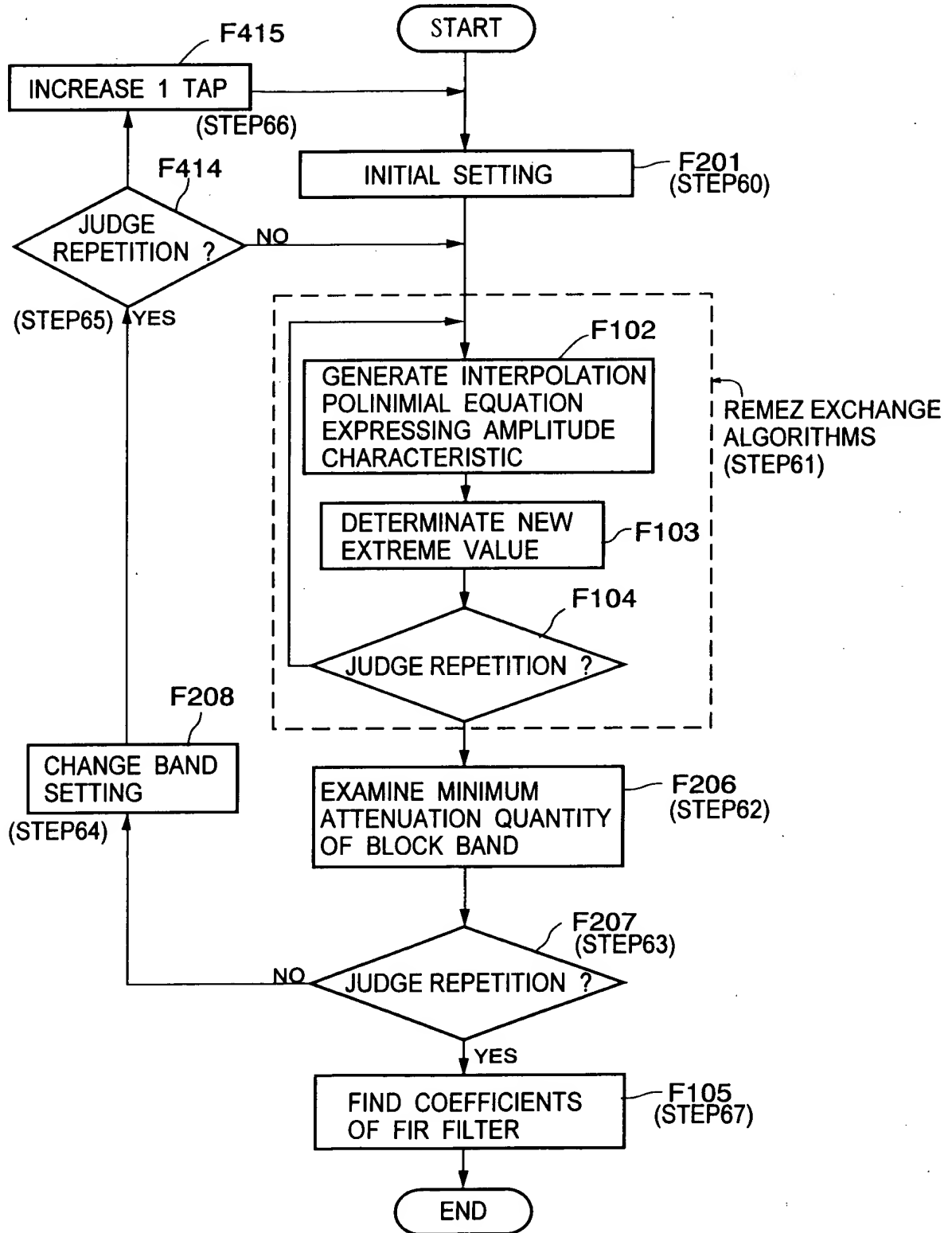


FIG.35



09374064 10664  
105050 15042860

FIG.36

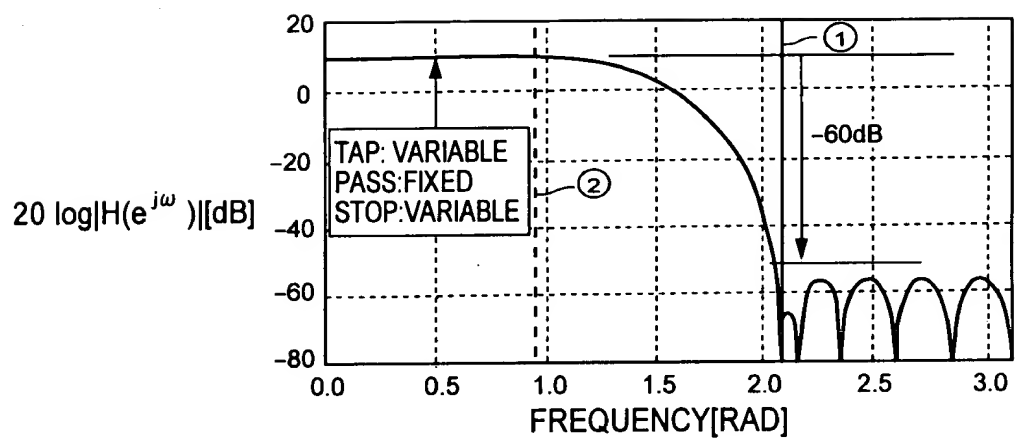
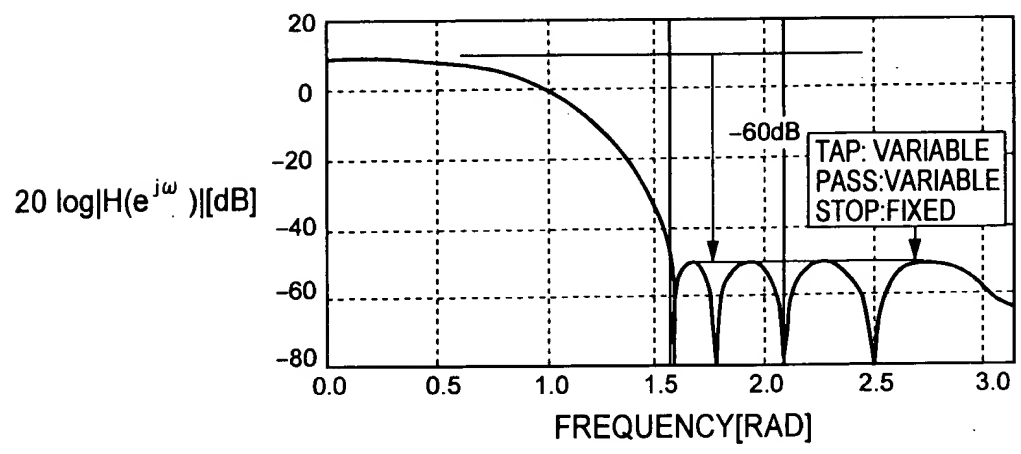
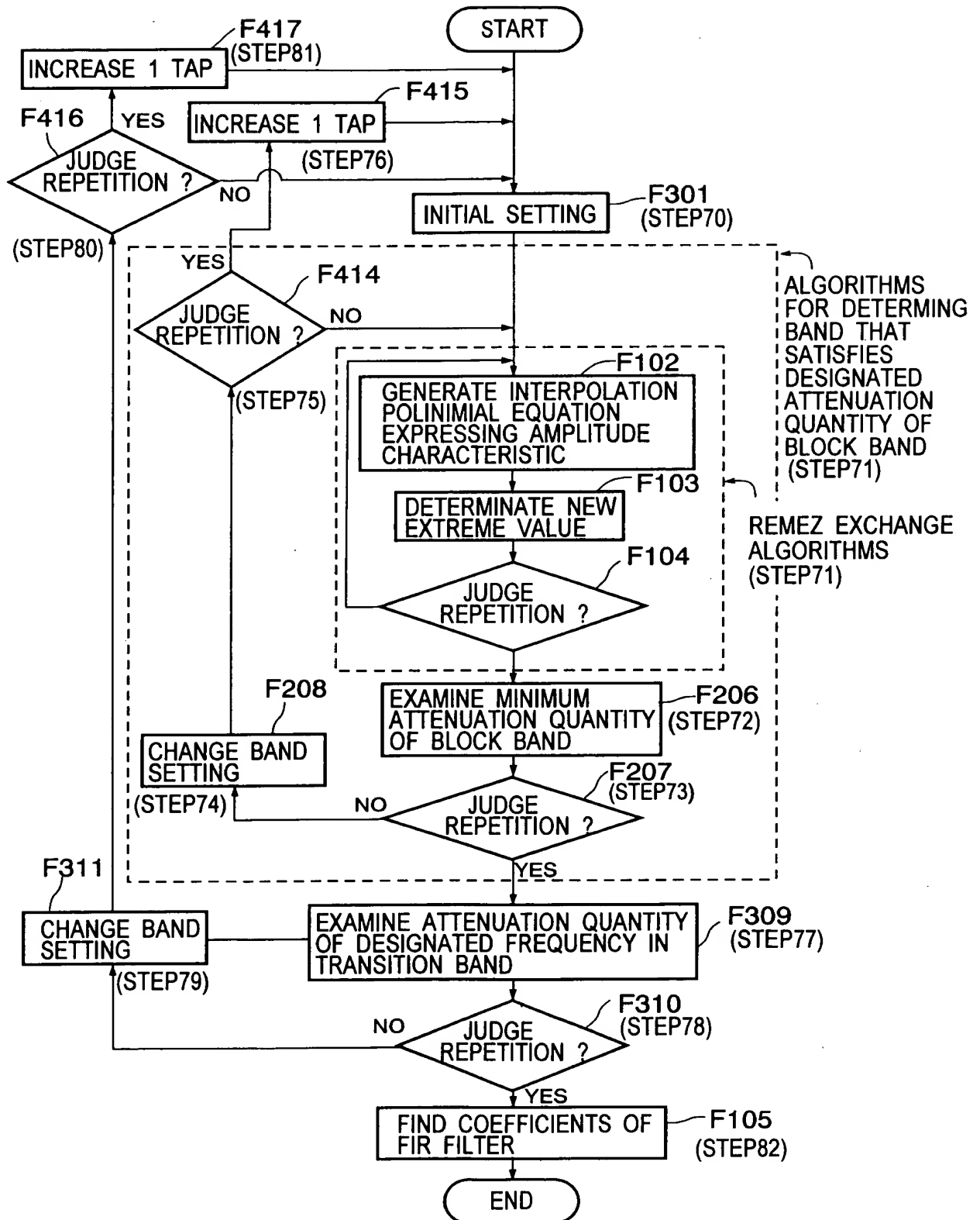


FIG.37



# FIG.38



FD9090" 19012860

FIG.39

